

IT Security

Information & Network Security

by Philipp Bandow

original slides by Bjoern Kimminich

Philipp Bandow

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- Lecturer at [Nordakademie](#) since 2021
- Working student in DevSecOps

Contact Information

Email

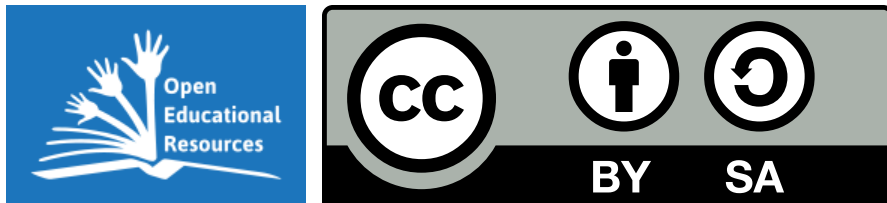
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Miscellaneous




- Threema: [AS7PA49H](#)
- Keybase: [philban](#)
- Github: <https://github.com/philband>



Course Material

<https://github.com/philband/it-security-lecture>



Course Material

- All slides and references are in  language
- The lecture can be held in  or  language
- Latest course material is available only on GitHub
- Content exists as `Markdown` files for use with [Marp](#)
- Slides can be [downloaded as PDF](#) from GitHub
- All slides are published as [OER](#) under [CC BY-SA 4.0](#) license

You can help save a  by not  all slides for the entire course in advance as content might change during the course!

Rules

- Presence at lectures is mandatory and will be logged
- Exercises are mandatory (unless explicitly marked as *optional*)
- Exercises marked with
 - "🤝" are done in small work groups
 - "📌" are usually done as a group using whiteboard, flipcharts or brown-paper or a dedicated [Spitfire](#) virtual whiteboard
 - "📝" have a (digitally) written outcome per student or work group
 - "🏠" are homework and must be completed until the next lecture
- Active participation and questions are encouraged at all times
- If you are done early with the last exercise of the day, you may leave

Curriculum 1st Semester

1. Motivation
2. Security Goals
3. Malware
4. Network Security
5. Encryption
6. Security Management & Organization
7. Presentations of all Encryption work groups
8. Threat Modeling
9. Penetration Testing


Curriculum 2nd Semester

1. [Open Web Application Security Project \(OWASP\)](#)
2. [XSS](#)
3. [Injection](#)
4. [Authentication Flaws](#)
5. [Authorization Flaws](#)
6. [Sensitive Data](#)
7. [Insecure Dependencies & Configuration](#)
8. [XXE & Deserialization](#)
9. [Secure Development Lifecycle](#)

Schedule

- Tuesdays, 16:15 - 18:45
- 10 lectures (18.10. - 20.12.20)
- 100% online lecture
 - There will be 1-3 lectures on site in Elmshorn

Test Exam

- At the end of 2nd semester (90min)
-  Covers topics from both semesters

Recommended Resources

- [Berkley Information Security and Policy - Best Practices & How-To Articles](#)

Optional Literature Recommendations

- Andress: The Basics of Information Security (2nd Edition), 2014
- Shostack: Threat Modeling: Designing for Security, 2014
- Paar/Pelzl: Understanding Cryptography: A Textbook for Students and Practitioners, 2010
 - [Introduction to Cryptography by Christof Paar](#) (24 recorded lectures)

Prerequisites @ **Angewandte Informatik (B.Sc.)**

| | | | |
|--|------|----------------------------------|------|
| Information & Network Security | S5 | Application Security & SDLC | S6 |
| Diskrete Mathematik 2 | S2 | Datenbanksysteme | S2+3 |
| Technische Grundlagen der Informatik 2 | S3+4 | Praxis der Softwareentwicklung | S3+4 |
| Gestaltung von Informationssystemen | S3+4 | Softwarequalitaet | S4 |
| IT-Organisation und Projektmanagement | S3+4 | Software Engineering | S5+6 |
| Informatik und Gesellschaft | S1 | Internet Anwendungsarchitekturen | S5+6 |